Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharmacy Sem-II examination June 2009

Subject code: 220006 **Subject Name: Physical Pharmacy**

Date: 15/06/2009 **Time: 11:30am-2:30pm**

Total Marks: 80

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	(a)	Define Polymorphism. Discuss the significance of Polymorphism in Pharmacy with example.	**06**
	(b)	Discuss the two component systems containing solid and liquid Phases.	**06**
	(c)	Write a note on liquid Crystals.	**04**
Q.2	(a)	What is Buffer capacity? How it is calculated?	**07**
	(b)	Write a note on Pharmaceutical Buffer.	**05**
	(c)	Calculate the pH of 0.02 M $Ba(OH)_2$.	04
Q.3	(a)	Write in detailed note on Non-Newtonian systems.	**05**
	(b)	Classify various viscometers. Describe two viscometer with diagram to find out viscosity of Non-Newtonian fluids.	06
	(c)	What a note on : Plastic and Pseudoplastic flow.	**05**
Q.4	(a)	Differentiate various types of colloidal dispersion system and give the application of colloids in pharmacy.	**07**
	(b)	Define Suspension. Write a note on factors affecting stability of Suspension.	**05**
	(c)	Discuss the instability of emulsions.	**04**
Q.5	(a)	Discuss the method of determining the particle volume in detail.	**06**
	(b)	Discuss the porosity and Kelvin equation with their significance in pharmacy.	**06**
	(c)	A sample of calcium carbonate having density 2.8 g/cm^3, allow to settle under acceleration of gravity (g_c = 980 cm/sec) the rate of setting (v) is 14.6 X 10^{-3} cm/sec, the density (ρ) of water is 1.00g/cm^3 and viscosity (η) is 0.01 poise. Calculate the Stoke's Diameter.	04
Q. 6	(a)	Explain the Surface and Interfacial tensions.	**05**
	(b)	What is spreading Coefficient? Derive its equation.	**06**
	(c)	Describe the method of calculation of HLB by different techniques.	**05**
Q.7	(a)	Write a note on solubility of gases in liquid.	**05**
	(b)	Write a note on law of distribution.	**06**
	(c)	Write a note on physical stability of emulsion.	**05**

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